

CLAIMS

What is claimed is:

1. A bumper beam comprising:
a first portion comprising a first material; and
a second portion comprising a second material,
wherein said first material has different material properties than said second material.
2. A bumper beam according to Claim 1, wherein said first material has a generally higher strength than said second material.
3. A bumper beam according to Claim 1, wherein said first material has a different thickness than said second material.
4. A bumper beam according to Claim 1, wherein said first material comprises martensitic steel.
5. A bumper beam according to Claim 1, wherein said second material comprises dual-phase, multiphase, complex-phase or transformation induced plasticity steel.
6. A bumper beam according to Claim 1, wherein said first portion and said second portion are fixedly attached to each other.
7. A bumper beam according to Claim 1, wherein said first portion has a generally C-shaped cross-section having a back and two legs extending orthogonally therefrom.
8. A bumper beam according to Claim 7, wherein said second portion has a cross-section including two generally C-shaped sections, each section having a back and two legs, said back being positioned between said legs.

9. A bumper beam according to claim 8, wherein said C-shaped sections are joined together by a connecting segment positioned between said C-shaped sections.

10. A bumper beam according to Claim 8, wherein at least one of said legs is generally orthogonal to said back.

11. A bumper beam according to Claim 8, wherein one of said legs of each C-shaped section of said second portion is fixedly attached to one of said legs of said first portion.

12. A bumper beam according to Claim 8, wherein each of said legs of said first portion is fixedly attached to a bending portion at one of said legs of each C-shaped section of said second portion.

13. A bumper beam according to Claim 8, wherein said back of said first portion is fixedly attached to one of said legs of each C-shaped section along a longitudinal axis, A.

14. A bumper beam according to Claim 8, wherein one of said C-shaped sections of said second portion is fixedly attached to the other of said C-shaped sections of said second portion along a longitudinal axis, A, of said bumper beam.

15. A bumper beam according to Claim 9, wherein said connecting segment is fixedly attached to said back of said first portion.

16. A bumper beam comprising:
a first portion fixedly attached to a second portion;
said first portion having a generally C-shaped cross-section and comprising a first material;
said second portion having a cross-section with two generally C-shaped sections integrally joined together and further comprising a second material,

wherein said first material of said first portion has a different material property than said second material of said second portion.

17. A bumper beam according to Claim 16, wherein said first portion includes a back and two legs extending orthogonally therefrom.

18. A bumper beam according to Claim 16, wherein each C-shaped section of said second portion includes a back and two legs extending from said back.

19. A bumper beam according to Claim 16, further including a connecting segment integrally joined between said C-shaped sections of said second portion.

20. A bumper beam according to Claim 16, wherein said first portion is fixedly attached to said second portion at a plurality of locations.